



(12) **United States Patent**
Boesen

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(54) **EARPIECE WITH AN INERTIAL SENSOR**

(56) **References Cited**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 43 days.

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This patent is subject to a terminal disclaimer.

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(65) **Prior Publication Data**

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Related U.S. Application Data

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(63) Continuation of application No. 10/236,196, filed on Sep. 6, 2002, now Pat. No. 6,920,229, which is a continuation-in-part of application No. 10/134,239, filed on Apr. 29, 2002, which is a continuation of application No. 09/587,743, filed on Jun. 5, 2000, now Pat. No. 6,408,081, which is a continuation of application No. 09/309,107, filed on May 10, 1999, now Pat. No. 6,094,492.

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(57) **ABSTRACT**

(51) **Int. Cl.**

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A communication device includes an earpiece housing adapted for fitting to an ear of a user such that the earpiece does not block the canal, an inertial sensor operatively connected to the earpiece housing for sensing positional changes of the user's ears, a processor operatively connected to the inertial sensor and disposed within the earpiece determining presence of an alert condition at least partially based on positional changes, and a speaker operatively connected to the processor.

(52) **U.S. Cl.** **381/380; 381/326; 340/575**

(58) **Field of Classification Search** **381/326, 381/238, 380, 312, 315, 322; 340/575, 576**

See application file for complete search history.

20 Claims, 9 Drawing Sheets

